今週の積分

1. $\displaystyle\int \tan^3 x\ dx$ ★★

2. $\displaystyle\int_0^{2\pi} \sqrt{1+\cos x}dx$ ★★

3. $\displaystyle\int_0^1 \sqrt{\frac{1-x}{1+x}}\ dx$ ★★★★

4. $\displaystyle\int_1^2 \frac{dx}{2^x}$ ★

5. $\displaystyle\int \frac{dx}{\sin x}$ ★★★

6. $\displaystyle\int \frac{dx}{\sqrt{1+x^2}}$ ★★★★

7. $\displaystyle\int x\sqrt{3x-5}\ dx$ ★★

8. $\displaystyle\int_1^e \sqrt{x}\log x\ dx$ ★★

9. $\displaystyle\int (\log x)^2\ dx$ ★★

10. $\displaystyle\int_0^2 \frac{3x^3+12x+1}{x^2+4}\ dx$ ★★★

11. $\displaystyle\int \frac{dx}{x(1+\log x)}$ ★★

12. $\displaystyle\int \frac{dx}{x-\sqrt{x}}$ ★★

13. $\displaystyle\int_{\frac{4}{3}}^2 \frac{dx}{x^2\sqrt{x-1}}$ ★★★★

14. $\displaystyle\int \frac{dx}{\sqrt{x^2+6x+13}}$ ★★★★★

15. $\displaystyle\int \frac{x}{\cos^2 x}\ dx$ ★★

16. $\displaystyle\int \log_2 x\ dx$ ★

17. $\displaystyle\int \frac{x-1}{(x+1)(x^2+1)}\ dx$ ★★

18. $\displaystyle\int \frac{x+2}{x(x+1)^2}\ dx$ ★★

19. $\displaystyle\int \frac{dx}{\sin^2 x}$ ★

20. $\displaystyle\int_0^{\sqrt{\frac{\pi}{2}}} x^3\cos x^2\ dx$ ★★★

21. $\displaystyle\int \tan x\log\left(\cos^2 x\right)\ dx$ ★★★

22. $\displaystyle\int \frac{d\theta}{\cos^3\theta}$ ★★★★★

23. $\displaystyle\int \frac{dx}{1+\sin x}$ ★★★

24. $\displaystyle\int x2^x\ dx$ ★★

25. $\displaystyle\int_2^3 \frac{x-1}{x^2}e^x\ dx$ ★★★★

26. $\displaystyle\int \frac{dx}{\sin x\cos x}$ ★★★

27. $\displaystyle\int 2^{\log x}\ dx$ ★★★

28. $\displaystyle\int_0^1 \frac{dx}{x^3+1}$ ★★★★★

29. $\displaystyle\int_0^2 \sqrt{x^2-2x+1}\ dx$ ★★

30. $\displaystyle\int \frac{dx}{\cos^4 x}$ ★★★

31. $\displaystyle\int_{-1}^1 \frac{x^2}{1+e^x}\ dx$ ★★★★★

32. $\displaystyle\int \frac{\sin\frac{1}{x}}{x^3}\ dx$ ★★

33. $\displaystyle\int \frac{\sqrt{\tan x}}{\sin 2x}\ dx$ ★★★

34. $\displaystyle\int xe^x\sin x\ dx$ ★★★

35. $\displaystyle\int \sin(\log x)\ dx$ ★★

36. $\displaystyle\int_0^1 \left(x+2x^3\right)\sqrt{1+2x^2}\ dx$ ★

37. $\displaystyle\int \frac{\log(\log x)}{x\log x}\ dx$ ★★

38. $\displaystyle\int_0^{\frac{\pi}{2}} \frac{\cos x}{\sin x+\cos x}\ dx$ ★★★★★

39. $\displaystyle\int \sqrt{e^x}\ dx$ ★

40. $\displaystyle\int \frac{dx}{x(\log x)^2}$ ★★

41. $\displaystyle\int x\sin x\cos x\ dx$ ★★

42. $\displaystyle\int xe^x\sin x\cos x\ dx$ ★★★★

43. $\displaystyle\int_0^{\pi} \frac{x\sin x}{8+\sin^2 x}\ dx$ ★★★★★

44. $\displaystyle\int_0^1 \frac{x^6}{1+x^{14}}\ dx$ ★★

45. $\displaystyle\int \frac{dx}{x^4+x}$ ★★★

46. $\displaystyle\int_0^{2020\pi} |\sin(2020x)|\ dx$ ★★★

47. $\displaystyle\int_e^{e^2} x^{\frac{1}{\log x}}\ dx$ ★★

48. $\displaystyle\int x^x(\log x+1)\ dx$ ★★★★

49. $\displaystyle\int_1^2 x(x-3)^6\ dx$ ★★

50. $\displaystyle\int \frac{dx}{1-e^{-x}}$ ★★★

51. $\displaystyle\int_0^{\frac{1}{2}\log 3} \frac{e^x}{1+e^{2x}}\,dx$ ★★★

52. $\displaystyle\int_0^1 \log\left(x^2+1\right)\,dx$ ★★★★

53. $\displaystyle\int_1^2 \left(x^3+2x^2+5x\right)\,dx$ ★

54. $\displaystyle\int_0^{\pi} \frac{x\sin x}{3+\cos 2x}\,dx$ ★★★★★

55. $\displaystyle\int \frac{\log x}{x^2}\,dx$ ★★★

56. $\displaystyle\int \left(\frac{\log x}{x}\right)^2\,dx$ ★★★

57. $\displaystyle\int \cos 2x\cos 4x\,dx$ ★★

58. $\displaystyle\int \frac{dx}{x\Big(4-(\log x)^2\Big)}$ ★★★

59. $\displaystyle\int_0^{\pi} \frac{\sin x}{1+\cos^2 x}\,dx$ ★★★

60. $\displaystyle\int_{\sqrt{2}}^2 \frac{dx}{x\sqrt{x^2-1}}$ ★★★

61. $\displaystyle\int \frac{dx}{x\sqrt{1-x^2}}$ ★★

62. $\displaystyle\int e^{(e^x+x)}\,dx$ ★

63. $\displaystyle\int \frac{dx}{3^{2-5x}}\,dx$ ★★

64. $\displaystyle\int \frac{(\log x+3)^2}{x}\,dx$ ★★

65. $\displaystyle\int_1^{\sqrt{3}} \frac{\log\sqrt{x^2+1}}{x^2}\,dx$ ★★★★

66. $\displaystyle\int \frac{x}{(x^2+2)(x^2+3)}\,dx$ ★★★

67. $\displaystyle\int_0^{\frac{\pi}{2}} \frac{(\cos x)^{\sqrt{3}}}{(\sin x)^{\sqrt{3}}(\cos x)^{\sqrt{3}}}\,dx$ ★★★★★

68. $\displaystyle\int_0^2 \frac{e^x}{e^x+e^{2-x}}\,dx$ ★★★

69. $\displaystyle\int_0^1 \frac{2x+2}{x^2+x+1}\,dx$ ★★★★

70. $\displaystyle\int_0^{\frac{\pi}{4}} \frac{x^2}{(x\sin x+\cos x)^2}\,dx$ ★★★★★

71. $\displaystyle\int_{-1}^1 \frac{x^3}{1+x^2}\,dx$ ★

72. $\displaystyle\int \frac{dx}{x(x+1)(x+2)}$ ★★

73. $\displaystyle\int \frac{4\big(3+3x-x^2\big)}{(x-1)^2(x+1)}\,dx$ ★★★

74. $\displaystyle\int \frac{x}{1-x^2}\,dx$ ★★

75. $\displaystyle\int_{-1}^1 \frac{\sin^2(\pi x)}{1+e^x}\,dx$ ★★★★★

76. $\displaystyle\int \left(x^2-2x\right)\cos 2x\,dx$ ★★★

77. $\displaystyle\int_0^1 x^4e^{-x}\,dx$ ★★★

78. $\displaystyle\int_1^4 \frac{\left(\sqrt{x}+2\right)^2}{3\sqrt{x}}\,dx$ ★★

79. $\displaystyle\int \frac{dx}{\cos x}$ ★★★

80. $\displaystyle\int_0^{\pi} e^{2x}\sin x\,dx$ ★★

81. $\displaystyle\int e^x\sin^2 x\,dx$ ★★★

82. $\displaystyle\int_0^1 \frac{x^5}{x^3+1}\,dx$ ★★★

83. $\displaystyle\int_0^1 \sqrt{\frac{x}{1+x}}\,dx$ ★★★★

84. $\displaystyle\int_{\frac{1}{2}}^1 x\sqrt{\frac{1}{x}-1}\,dx$ ★★★

85. $\displaystyle\int \frac{3^x}{3^x+\log 3}\,dx$ ★★

86. $\displaystyle\int \tan^5 x\,dx$ ★★★

87. $\displaystyle\int_2^4 \frac{\sqrt{\log(9-x)}}{\sqrt{\log(9-x)}+\sqrt{\log(x+3)}}\,dx$ ★★★★★

88. $\displaystyle\int_0^1 \frac{\log(1+x)}{1+x^2}\,dx$ ★★★★★

89. $\displaystyle\int \cos x\cos 2x\cos 3x\,dx$ ★★

90. $f(x)=\tan x\ \left(0\leqq x\leqq\frac{\pi}{4}\right)$
$\displaystyle\int_0^1 f^{-1}(x)\,dx$ ★★★★★

91. $\displaystyle\int_0^{\pi} \frac{dx}{1+(\sin x)^{\cos x}}$ ★★★★★

92. $\displaystyle\int \sqrt{x\sqrt{x\sqrt{x\cdots}}}\,dx$ ★★★

93. $\displaystyle\int \frac{\log x}{(x+1)^3}\,dx$ ★★★

94. $\displaystyle\int_e^{e^e} \frac{\log x\cdot\log(\log x)}{x}\,dx$ ★★

95. $\displaystyle\int \log\frac{1+x}{1-x}\,dx$ ★★

96. $\displaystyle\int_0^{2\pi} \sin(\sin x-x)\,dx$ ★★★★★

97. $\displaystyle\int x^{2x}(2\log x+2)\,dx$ ★★★★

98. $\displaystyle\int_0^{\frac{\pi}{2}} \sin(2x)\cos(\cos x)\,dx$ ★★★★

99. $\displaystyle\int_0^{2\pi} |\sin x-3\cos x|\,dx$ ★★★★★

100. $\displaystyle\int_0^{\frac{\pi}{4}} \sqrt{\tan x}\,dx$ ★★★★★★★★★★